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Environmental Scanning Behavior of the Top Managers: A Regulatory Focus Model*

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Abstract

Drawing on regulatory focus theory (Higgins 1997), I propose a model of firm's environmental scanning behavior. Specifically, I explore a firm's environmental scanning behavior as a function of the motivational mindset of the firm's top management team. Prior research has shown that diversity of the TMT's composition has an impact on the firm's strategic behavior. I take this premise further to suggest that: 1) a TMT's cognitive diversity is likely to differ in the collective mindset in their degree of promotion- or prevention-focus; 2) this differential mindset is likely to mediate the processing style of the environment, and subsequently differentially drive the firm's strategic choice.

Keywords: Regulatory focus theory, top management teams, managerial cognition, diversity

INTRODUCTION

Organizational actions are reflections of information collected from the external environment (Daft and Weick 1984). As the most important interface between the external environment and the organization, environmental scanning often provides a crucial trigger for the organizational adaptation process (Daft and Weick 1984; Pfeffer and

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Salancik 1978). In fact, organizations that scan their environment effectively can have an information advantage over those that do not and become better aligned with the external conditions (Daft, Sormunen and Parks 1988). The need for effective scanning of the environment and adaptation is even more crucial because of dramatic changes occurring constantly in the external environment, such as government deregulation. As such, several empirical studies indicate a linkage between managerial perceptions of environmental characteristics and the saliency of the external events expected to affect the firm performance (Bourgeois 1985; Dess and Keats 1987).

Although the literature on environmental scanning has grown substantially over the years, however, there is a paucity of knowledge concerning the factors and processes that mediate the scanning of the external environment. In this theoretical inquiry, I draw on the previous research finding that turnover/increased heterogeneity among executive team members serves as a significant force that drives such adaptation in environmental scanning (Cho 2006). I propose that the cognitive processes involved in scanning the environment depends largely on the motivational mindset of the top management team (TMT) as a unit. A TMT's motivational mindset can be characterized as either promotion- or prevention-focused. Drawing from the psychology research on regulatory focus theory (Higgins 1997), I propose that a team's collective motivational orientation (either promotion or prevention-focused) can be a critical factor in how it scans the environment and processes the information obtained from this scanning. A promotion-focused processing of the environment entails a more proactive, optimistic, and risk-taking propensities for action. In contrast, prevention-oriented scanning of the environment is likely to be driven by a more reactive, risk-averse, vigilant scanning of the environment. Subsequently, I propose that this motivational orientation serves to mediate the environmental scanning process of the TMT. Specifically, higher degree of cognitive diversity among the TMT members is likely to lead to a more promotion-focused processing of the environment, which entails a more proactive, optimistic behavioral tendency, along with greater risk-taking and a propensity for action. With more homogeneous mindsets, on the other hand, managers' environmental scanning is likely to be driven by a more prevention-focused processing, which entails a reactive, risk-averse, vigilant scanning of the environment, along with a preference for the status quo or inaction. This inquiry

attempts to address the long-proposed question of what happens inside the "black box" of TMT processes. To the extent that TMT is a decision making unit, characterizing the motivational orientation of this unit offers a relevant and novel perspective to examine the topic at hand.

In the following section, I provide a brief discussion of the extant research on the influence of TMT diversity on environmental scanning behavior. I then present the research on regulatory focus, a well-established motivation research from which I derive my main propositions and predictions that follow these propositions.

THEORETICAL BACKGROUND AND PROPOSITIONS

A large portion of top executives' time is spent on scanning the external environment (Mintzberg 1973), defined as the activity of acquiring information, involving exposure to, and perception of, information (Aguilar 1967). Elaborating this further, Milliken (1990) stated that the purpose of scanning is to "identify the key trends, changes, and events in an organization's environment that might affect the organization's functioning (p. 43)" which in turn lead to appropriate actions. Kiesler and Sproull (1982) also suggested that the executives' "problem sensing" of a stimulus is the first crucial step for an organizational response to a stimulus. Obtaining information from as many different environmental sectors as possible helps the organizations to gain access to timely information (Beal 2000; Hambrick 1982) and formulate the appropriate response for strategic adaptiveness (Strandholm, Kumar and Subramanian 2004).

Recent studies in organizational adaptation literature have demonstrated the importance of TMT-level attributes in environmental scanning. For instance, Cho (2006) showed that following an environmental shift, the dramatic changes in the external conditions will drive the top executives to widen the scope of their environmental scanning. With greater environmental uncertainty, executives became more sensitive to their external conditions as the number of unfamiliar stimuli increases (Kiesler and Sproull 1982) and ultimately altered their environmental scanning behavior. Few studies, however, have examined the very characteristics of the executive team that mediate this broadening

scope in environmental scanning. Existing research suggests that the characteristics of the individuals who comprise the TMT matters. In the following section, the research linking TMT composition to environmental scanning is discussed.

The Linkage between TMT Cognitive Diversity and Environmental Scanning Behavior

Previous researchers have argued that incumbent executives can be impediments to organizational adaptation because they may be trapped by their prior competences, successes, and social processes (Pfeffer and Salancik 1978; Finkelstein and Hambrick 1990). Bringing in new executives whose values and perspectives deviate from the incumbent managers is a way to achieve greater cognitive and social openness to change (Helmich and Brown 1972; Finkelstein and Hambrick 1996). Indeed, prior research has shown that increased diversity among executives through turnover — not just the CEO, but other senior executives as well — can serve as a mechanism for organizational adaptation and leads to improved firm performance, particularly in a turbulent environment (Virany et al. 1992). This effort to realign managerial profiles with the changed requirements of the industry might be triggered by an implicit awareness of the firm that new skills and perspectives are necessary (Pfeffer and Salancik 1978). At the same time, the executives who are ill-suited to the new environment will tend to depart voluntarily because of discomfort with the new environmental challenges or involuntarily because of outright failure. They will tend to be replaced by executives who are attracted to, and whose skills fit, the new conditions in the industry (Grimm and Smith 1991; Finkelstein and Hambrick 1996). It is also reasonable to suggest that increased degree of cognitive diversity among top executives typically through turnover is associated with the firm's adaptability in shifting external environment. In support of this view, there has been increasing recognition in the value of diversity in views, experiences and cognitive styles in a group decision making setting, such that the resulting diversity is observed to lead to objectively superior, "smarter" decisions, than if a single leader, or homogeneous team had been in charge (Surowiecki 2004).

Drawing from the previous literature, I propose that the TMTs with a high level of cognitive diversity among their members are

associated with the most proactive level of environmental scanning. These would be the teams with openness to change and cognitive flexibility in their decision making. With greater collective pool of cognitive resources, the top teams with diverse perspectives, experiences and values will be more likely to be exhaustive and thorough in scanning the external environment. Conversely, those firms whose TMTs are homogeneous in their attributes, and likely to maintain similar values and outlook, would be narrower in their vision and rooted in the *status quo*; they will, therefore, show relatively narrower scope of environmental scanning. Thus, I propose the following:

> **Proposition 1:** The higher the cognitive diversity of the TMT, the greater its scope of environmental scanning.

The proposed enhanced environmental scanning pattern that is proposed to accompany the cognitively diverse TMT presumes a diversity and openness of perspectives and exchange of these perspectives. While this assumption regarding the wider scope of environmental scanning by cognitively diverse TMT is reasonable, it nevertheless lacks a solid theoretical conceptualization of the dynamics of the process. For example, how does the diversity of views manifest in the exchange of views, processing of these information by the members and the collective decision making process? If anything, diversity has the potential for increased room for disagreements. The wider range of views and perspectives could potentially become a hindrance to the collective process; how is this to be reconciled with the extant research finding that heterogeneous TMT exhibits superior strategic actions? What moderates whether or not the wider cognition actually leads to consensus and to decisive strategic action? What facilitates the heterogeneous TMT in benefitting from their diverse background towards implementing superior strategic action as proposed by extant research on the topic? I suggest that the diversity of views and the dynamic exchange of ideas proposed to take place within a heterogeneous TMT can be characterized and analyzed by examining their collective motivational mindsets. Specifically, the psychology literature on regulatory focus theory offers a very useful and promising conceptual framework to look "inside the black box." In the following section, a brief discussion of the theory and the proposition for its

relationship to cognitive composition of TMT is presented.

Regulatory Focus Theory

Overview. Self-regulation refers to the process in which people seek to align themselves (i.e. their behaviors and goals) with appropriate goals or standards. Extending the basic hedonic principle that people are motivated to approach pleasure and avoid pain, Higgins (1997) suggested that there are important differences through which people approach pleasure and avoid pain. He proposed that people have two basic self-regulation systems. One system regulates the achievement of rewards and focuses people on approaching the desired end, i.e. *promotion goal*. In contrast, the second system regulates the avoidance of punishment and focuses people on avoiding negative outcomes, i.e. *prevention goal*. The theory assumes that *promotion focus* in regulatory orientation is concerned with "ideals," with advancement, aspiration, and accomplishment (more generally, the presence or absence of positive outcomes). In contrast, security-related regulation involves a *prevention focus*, which is a regulatory state concerned with "oughts," with protection, safety, and responsibility (more generally, the absence or presence of negative outcomes). *Promotion*-focused people prefer to use *eagerness*-related means, the type of means most suited to a concern with advancement, aspiration, and accomplishment (Crowe & Higgins 1997). In contrast, *prevention*-focused people prefer to use *vigilance*-related means, the type of means most suited to a concern with protection, safety, and responsibility (Crowe & Higgins 1997). Regulatory focus theory thus goes beyond the basic, widely accepted hedonic principle that people approach pleasure and avoid pain to examine people's strategic choices and use of means in pursuing their goals.

More recent research on regulatory focus has presented it as a motivated cognition process, in which, people under a particular motivational state process information differently by giving greater weight to information that are congruent to their motivational state. The differential weighting and the processing of information is predicted to lead to different behavioral predictions. A more detailed summary of this motivated cognition perspective and the behavioral implications are presented in the following section.

Regulatory Focus, a Motivated Cognition Perspective. While a firm and its TMT is assumed to process information using a cognitive lens, the actual characteristics and its behavioral predictions per se, have not been defined in detail. The theory of regulatory focus could provide this link: A firm scans the environment, but that this scanning behavior is a function of the motivated cognition which take place by way of the top management team. The theory holds that people can be differentially motivated and that cognitions about the environment and information take place differently to reflect these motivational mindsets, leading to "cognitive tuning" (Higgins and Spiegel, 2004). Promotion orientation "tunes" the processing of the environmental change towards making the right action, and prevention orientation is tuned towards avoiding making the wrong action, hence inaction. As a result, holding all else constant, promotion focus would induce a weighting function that assigns greater weight to information about the environment that would be conducive to and justify taking action, whereas prevention would assign greater weights to information that would justify reasons to take less action, or the status quo.

Research on this theory suggests that differential "tuning" of the cognition process leads to distinct behavioral patterns. For example, when asked to come up with as many explanation for a vague social behavior, promotion-focused individuals were able to generate significantly greater number of possible explanations for the specified behavior, compared prevention-focused individuals (Molden and Higgins, 2005). This is because the task of coming up with as many explanation as possible represents an *eager* strategy — a strategy preferred under promotion focus. For prevention-focused individuals, the concern about citing an incorrect explanation — a *vigilant* strategy — led to a fewer number of explanations rendered. The different strategic preference is also found to operate for propensity for risk. Because promotion-focus leads to a preference for eager strategies, and thus a concern with achieving "correct hits," or taking correct action, it also reflects a "risky" response bias, whereas prevention-focus leads to a "conservative" response bias, whereby there is a greater concern for "false hits," or making incorrect moves, and thus leads to a "conservative" response bias (Crowe and Higgins 1997).

TMT Cognitive Diversity as Determinant of Regulatory Focus

While no research has linked regulatory focus nor motivational framework to TMT as a decision making unit, it appears to be a reasonable proposition that a group can have a collective motivational orientation which then guides the group's decisions. In Levine, Higgins and Choi (2000), for example, it was experimentally demonstrated that group decisions can take on a risky or conservative strategic norm over time by imposing a gain (promotion) or loss (prevention) frame on the task. The study used a multi-period decision paradigm in which three-person teams converged to either promotion (taking greater risk to obtain success) or prevention (taking less risk to avoid loss) foci in a memory recognition task involving strings of letters. Whereas in these studies decision frame was imposed and led to a differential regulatory focus and decision making, the following question arises: can composition of groups, i.e. TMT, take on a differential focus as promotion or prevention? Research on TMT composition and turnover suggests this is so. Prior research on team cognition and composition of members would suggest that a more heterogeneous, dynamic team with a diverse set of experiences and perspectives are more likely to be promotion focused; in contrast, homogeneous TMT with a similar set of experiences and expertise is likely to be governed by prevention-focused concerns.

Prior research on TMT composition provides evidence that top teams that possess diverse mindsets tend to make more proactive, action-driven decision making, while TMT's with relatively homogeneous team composition is more likely to be driven by the status quo and relatively more inaction-oriented decision making (Hambrick et al. 1996). Heterogeneity in a TMT serves as a source of diverse perspectives, a larger cognitive base, and creativity. Previous research has also shown that heterogeneity fosters tolerance for ambiguity (Murray 1989), creativity and innovation (Bantel and Jackson 1989), and decision making ability of the team (Eisenhardt and Schoonhoven 1990; Murray 1989). A team with multifaceted experiences and backgrounds is likely to identify and utilize a correspondingly wide set of opportunities stemming from the environment. Although the implications of TMT heterogeneity for firm performance are unclear (summarized in Kilduff, Angelman,

and Mehra 2000), there is evidence that diverse teams engage in diverse scanning (Sutcliffe 1994), multifaceted problem identification and solution-building (summarized in Jackson 1992), strategic innovation (Hambrick, Cho and Chen 1996) and environmental scanning (Cho, 2006).

In this light, I propose that the greater capacity of a cognitively diverse TMT to attend to broader range of stimuli is likely to be *mediated* by the TMT's collective regulatory focus (Higgins 1998). Specifically, the degree of cognitive diversity (or homogeneity) is proposed to induce a promotion-focus (or prevention-focus) in the TMT's collective regulatory orientation, such that when a TMT possesses a wide pool of cognitive resources, a promotion-focused orientation will dominate within the team, leading to an enhanced ability to comprehensively and thoroughly scan the environment. In contrast, when a TMT is relatively homogeneous in its mindset and prevention-focused, their relative ability to scan the environment and to take action is likely to be the least. A homogeneous TMT's scanning of the environment will likely be dominantly mediated by prevention focus, likely leading to a bias in favor of risk-averse, inaction, or status-quo-driven decisions.

> **Proposition 2a:** The greater the cognitive diversity of TMT, the greater the promotion-focus in the TMT's collective regulatory orientation.
>
> **Proposition 2b:** The greater the cognitive homogeneity of TMT, the greater the prevention-focus in the TMT's collective regulatory orientation.

Regulatory Focus and Environmental Scanning of TMT

The premise that different mindsets lead to differential cognition, processing of information and preference for risk taking has significant implication for managerial decision making. For a top executive team, then, it is reasonable to assume that group decision making is a function of the characteristics of the individual decision makers that comprise the collective decision making. In this light, I propose that the top teams with promotion focus will be endowed with greater capacity to scan the external environment. This is because promotion-focused top managers would be more likely to be focused on advancing the organization — eager strategies — in

times of uncertainty and aspire to a greater accomplishment at the firm-level (Crowe & Higgins 1997). It is predicted that the preference for eagerness strategies (over others) leads to various cognitive processes that would impact a TMT's decision making, and among them, lead to a widening of scope in how information from the environment is processed and reflected in the course of strategic actions undertaken by the TMT. Prevention-focused managers, on the other hand, would be more concerned with protection, safety, and responsibility — vigilant strategies — and will adhere to their familiar routines while being focused on maintaining the status-quo. Such a cognitive focus on information that is focused on safety and protection, as well as vigilance against taking the wrong action (errors of commission), when manifested in a TMT, would facilitate a narrower scope in the scanning of the environment with a focus on potential negative outcomes. For a group of decision makers such as a TMT, As such, the positive relationship between regulatory focus and scope of environmental scanning is proposed as the following:

> **Proposition 3a:** The more promotion-focused the TMT's collective regulatory orientation, the wider the TMT's scope of environmental scanning.
>
> **Proposition 3b:** The more prevention-focused the TMT's collective regulatory orientation, the narrower the TMT's scope of environmental scanning.

Based on these premises, the question that arises is when a TMT would exhibit either of the two regulatory orientations. Because most of the research on regulatory focus theory has used individual-level unit of analysis, it would be a relatively new perspective to apply the theory to a group decision making context. The prediction of widening of scope for promotion oriented TMT is derived from the cognitive tuning perspective as envisioned by regulatory theory. The notion that information processing is influenced by motivational or regulatory state, in our opinion, holds notable ecological validity and promises to fill the gap in the extant literature on environmental scanning by firms' top management and provides a valuable perspective on the cognitive processes that take place "inside the blackbox."

Propositions 2 and 3 together allow for the following process model to capture the relationships, leading to Proposition 4:

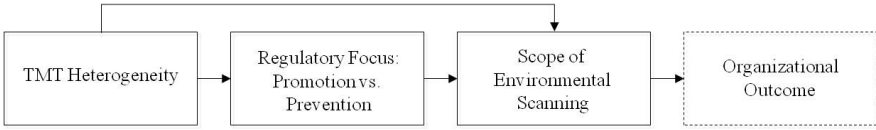

Figure 1. Process Model of TMT Environmental Scanning and Strategic Behavior

Proposition 4: The effect of TMT cognitive diversity on the scope of environmental scanning will be mediated by the top team's regulatory focus.

Proposition 4a: A cognitively diverse TMT is likely to have a promotional mindset; the promotion focus will increase the team's collective ability to scan the environment effectively.

Proposition 4b: A cognitively homogeneous TMT is likely to have a prevention mindset; the prevention focus will decrease the ability to scan the environment effectively.

Figure 1 is an illustration of the theoretical model linking cognitive diversity of top executive teams, their regulatory focus, and the scope of their environmental scanning. The last component, "organizational outcome", represents the organizational consequence of a broad array of strategic action based on the focal firm's environmental scanning, i.e., risk-taking and risk propensity in decision making, type of strategic decisions such as whether to take action vs. whether to stay with the status-quo option, whether or not to diversify and expand, as well as mergers and acquisition decisions. In sum, the regulatory focus theory allows for a multitude of predictions regarding the strategic decision making of TMT and its firm-level consequences according to the characteristics of their regulatory orientation.

SUMMARY AND DISCUSSION

In this paper, a number of propositions linking composition of top executive teams and their environmental scanning: First, the scope of environmental scanning is expected to be greater as the degree of TMT diversity increases. Diverse members of top executive teams with greater cognitive pool and strategic flexibility will be

more likely to adopt a proactive orientation in environmental scanning. In contrast, top teams whose members are homogeneous in their demographic attributes are likely to maintain similar values and outlook would be narrower in their vision and scope of environmental scanning.

Second, the regulatory focus of a top executive team is expected to mediate this linkage between TMT diversity and the scope of environmental scanning. Specifically, when a TMT is cognitively diverse, subsequently heightening the executives' collective regulatory focus, the scanning of the environment is predicted to be most expansive, proactive and in favor of action and tolerance for risk. Conversely, a TMT whose homogeneous executives collectively possess prevention-focused mindset, is predicted to scan their external environment in a limited, selective and risk-avoidant fashion, in favor of the status quo. These hypothesized relationships would become even more significant in a drastic environmental shift such as industry deregulation.

Empirical validation. This paper develops for the first time a set of propositions on the theoretical notion that executives' attributes influence how they adapt their scanning activities. Although previous studies have examined the direct linkage between the demographic characteristics of a top team and its managerial scanning behavior (Cho 2006), this would be the first study to consider the role of regulatory focus within the scanning process. A natural next step would be to empirically verify the relationships proposed. It is noted that capturing psychological processes of executives are necessarily difficult, since imposing experiments on the executives themselves is not only unfeasible in practicality, but also obtrusive. A promising source of insight could be found in official communications such as annual statements and proxy statements of firms, since proxy statements reflect the cognitive and motivational state of the top management and its perception of the environment and prospective course of action for the firm. The ready availability of such documents could lend a useful resource to capture the psychological variables of regulatory focus theory.

Admittedly, there is a number of anticipated difficulties in an empirical testing of the propositions: First, the operationalization of the environmental scanning variable needs to be explored further. Previous research such as Cho (2006) has relied on corporate

documents, such as annual reports, filed with the Securities and Exchange Commission and so forth. However, because corporate texts such as the letters to shareholders are targeted to specific audiences, for specific purposes, there is some possibility that the letters do not truly accurately reflect the collective mindsets of the top executive teams; rather, they are merely materials constructed for public relations purposes. Alternatively, it would be ideal to interview the top managers to capture the content of their attention. However, interviewing and increasing the saliency of their very act of attending to different stimuli would be intrusive in itself and may distort the managers' cognitive content. Although other means to procure the data on the actual environmental scanning seem scarce, future studies on executive cognition should explore more direct ways to tap into this area.

There are several possibilities to empirically test the propositions. For one, a field study on an on-going deregulation in an industry would be an ideal setting; methodologies such as surveys and interviews can certainly be utilized. Alternatively, corporate texts that are more plausibly tied to the managers' cognitive mindsets — such as verbatim transcripts of their meetings and conferences — may be used in addition to the archival sources to measure a team-level cognitive measure such as regulatory focus. Although it would be difficult to procure the data on the actual environmental scanning and executives' collective regulatory focus, future studies should explore more direct ways to tap into this area.

TMT Regulatory Focus and the Firm's Strategic Behavior. On a theoretical level, the cognitive and motivational processes proposed in this paper lends to many related and potentially rich areas of predictions for firm behaviors as seen through managerial cognitions of the TMT. Other consequences of the widening of the cognitive scope of TMTs can be drawn from the regulatory focus research. For example, regulatory focus predicts distinct behavioral tendencies for promotion (vs. prevention) focus in individuals which could potentially manifest in a host of other group decision making tendencies. If a firm can be conceptualized as pursuing a goal, predictions could be made regarding the choice of goals: promotion focus is expected to foster a preference for *maximal* goals that they hope to attain, whereas prevention focus is expected to foster a preference for minimal goals that people must obtain.

Regulatory focus theory predicts that, because a promotion focus reflects a tendency to view goal pursuit as a progress toward some ideal maximum goal, a promotion focus should not engender any particular pressure to pursue goals quickly and as a result, have a long-term orientation in their future outlook. In contrast, prevention focus, because a goal tends to be the necessary (and urgent) minimum that must be obtained, entails a short-term oriented, quick decision making. Whether and how these differential effects manifest in TMT behaviors would be a fruitful avenue of research.

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